



“COMPARATIVE STUDY BETWEEN EXCISION WITH PRIMARY CLOSURE VERSUS LIMBERG FLAP IN THE MANAGEMENT OF SACROCOCYGEAL PILONIDAL SINUS”

**Dr Mohana
Krishna M***

Associate professor, department of general surgery, Chalmeda Ananda Rao Institute of medical sciences, Karimnagar Telangana. *Corresponding Author

**Dr Katukojwala
Mounika**

Junior Resident, Department of General Surgery, Chalmeda Ananda Rao Institute of Medical Sciences, Karimnagar, Telangana.

ABSTRACT

Background: Pilonidal sinus is most commonly seen in young males, mostly affects hairy men. Widely accepted theory is acquired theory. Post op infection, recurrence, poor wound healing makes management complex. **Materials And Methods:** Prospective study conducted on 30 patients who diagnosed with pilonidal sinus and admitted in General surgery department, Chalmeda Ananda Rao Institute of Medical Sciences. Study done for a period of 12 months during the period of May 2022 to May 2023. According to inclusion and exclusion criteria patients were selected, Group A patients underwent rhomboid Excision with limberg flap procedure, Group B underwent Simple Excision and primary closure. For both groups operation time, postoperative day, early complications were noted. Late complications eg hypertrophic scar, delayed wound healing after a month of surgery noted, time for complete recovery, long term follow up of 6 months was done. Satisfaction of patients with operation and scar formation was reviewed. Comparison of two groups done. Using SPSS software data analysed, and chisquare and students t tests was applied. $P < 0.05$ considered as statistically significant. **Results:** In my study men outnumbered women by a 3:1 ratio. The range of the mean age at presentation: 28.47 ± 8.068 years. The condition was more prevalent in people who spent lot of time sitting down at work. Midline sacrococcygeal area have, variety of symptoms including discomfort, discharge, and swelling. Following surgeries, all of these patients were observed at one and six months, there was a significant difference in terms of postop complications, pain-free sitting and, pain levels on pods 1 and 4, recurrence, and patient satisfaction. **Conclusion:** The limberg flap procedure is best advised for the management of uncomplicated sacro-coccygeal pilonidal sinus disease even though it has similar risks to excision with primary closure. These benefits include earlier return to physical activity, quicker wound healing, shorter hospital stays, less postop complications, lower pain scores, and better patient satisfaction.

KEYWORDS :

INTRODUCTION:

The term "pilonidal disease" comes from the Greek words "pilus" for hair and "nidus" for nest. It is distinguished by persistent inflammation in one or more of the hair- and debris-filled sinuses in the natal cleft. Pilonidal disease comprises pilonidal cyst, abscess, and sinus. It primarily affects the sacro-coccygeal region, but it can also affect the umbilicus and hair stylists' digital clefts. Sacrococcygeal pilonidal sinus typically affects adult males under the age of 45. There has always been debate regarding the pathophysiology, from congenital to acquired hypothesis. The acquired theory is now the current fashion. Patients typically have chronic infectious discharge or an acute abscess attack. The primary method of diagnosis is clinical examination. Due to the greater prevalence of poor wound healing, postoperative infection, and recurrence, pilonidal disease management is complicated. Although there were numerous options, no one procedure has ever been widely regarded as the gold standard. Excision and secondary intention healing, marsupialization, excision and primary closure, and various types of excision followed by flap repair are some of the many treatments. With flap techniques there is low recurrence rate, reduced morbidity and length of hospital stay, improved cosmetic results, and favourable patient compatibility, thus several flap procedures have revolutionized the management of pilonidal disease. Rhomboid, V-Y advancement, Z-plasty, and myocutaneous flaps are different types. The Limberg flap technique has been demonstrated to be effective in the treatment of sacrococcygeal pilonidal illness among other flap techniques.

The purpose of this study is to compare traditional excision and primary closure to rhomboid excision of the pilonidal sinus with Limberg flap.

AIM AND OBJECTIVE

The aim of this study is to assess the morbidity, hospital stay, complications, and recurrence rate of Rhomboid excision with Limberg flap versus excision with primary closure in the treatment of uncomplicated sacrococcygeal pilonidal sinus illness.

MATERIALS AND METHODS

Study design: Prospective study

Study place: Department of General Surgery, Chalmeda Ananda Rao Institute of Medical Sciences, Karimnagar, Telangana.

Sample size: 30 cases

Study duration: 12 months (May 2022 to May 2023)

Inclusion Criteria :

- Both sexes of age group > 15 yrs
- Uncomplicated pilonidal sinus

Exclusion Criteria:

- Secondary opening > 5 cm from the midline
- Acute pilonidal abscesses or complex pilonidal sinuses
- Immunodeficiency conditions
- Patients with mental illnesses
- Recurrent disease or prior surgery in the sacrococcygeal area.

METHODS:

Detailed history was taken for all cases and they were examined clinically and later investigations done. The cases were divided into two groups, Group A and Group B. Group A underwent rhomboid excision with Limbergs flap and Group B underwent Excision and Primary closure. Patients in both groups were followed up for postop complications.

Data Analysis:

The results were analysed by Chi square test and significance (p value < 0.05).

RESULT:

Pilonidal sinus disease is always underreported since patients only consult doctors when they have difficulties or have persistently discharged sinuses. As a result, the information the patient provides is just the top of the iceberg. Finding out the incidence and prevalence of the condition is challenging because there are few studies on pilonidal sinus disease in India and many patients receive inadequate or incorrect diagnoses.

In our study, a total of 30 patients with simple sacrococcygeal pilonidal sinus disease were admitted, and they were then randomly separated into two groups and had either an excision and primary closure treatment (Group-B) or a rhomboid excision and Limberg flap (Group-A). Both of these operations were examined for operation time, immediate postoperative problems, and procedure outcomes with follow-up.

Duration Of Surgery

	Type of surgery	N	Mean	Standard deviation	Standard Error mean	T score	P Value
Duration (min)	Group A	15	67.33	6.230	1.609	8.453	0.0001
	Group B	15	47.67	6.510	1.681		

The mean duration of surgery was 67.33 min in rhomboid excision with Limberg flap and 47.67 min in Excision and primary closure technique. The difference was significant (p<0.0001).

Early Postop Complications Vs Type Of Surgery

EARLY POSTOP COMPLICATIONS	GROUP A	GROUP B	Chi sq Test	P value
NIL	8(53.3%)	3(20%)	12.873	0.025
BLEEDING	1(6.7%)	0(0%)		
INFECTION	2(13.3%)	8(53.3%)		
HEMATOMA	1(6.7%)	1(6.7%)		
DISCHARGE	3(20%)	0(0%)		
WOUND DEHISCENCE	0(0%)	3(20%)		

Group A : underwent Rhomboid excision with Limberg flap; Group B : underwent Excision with Primary closure

One month followup

One month followup	Group A	Group B	Chi sq test	P value
Healthy scar	13(86.7%)	9(60%)	2.861	0.239
Hypertrophic scar	1(6.7%)	2(13.3%)		
Wound gaping	1(6.7%)	4(26.7%)		

In my study, healthy scar is associated with 13 patients in Limberg flap and 9 patients of excision and primary closure. After 1 month of surgery wound gaping is present in only 1 patient who underwent rhomboid excision with Limberg flap and 4 patients of excision with primary closure

Six months followup

6 month followup	Group A	Group B	Chi sq Test	P value
Nil	14(93.3%)	8(53.3%)	6.136	0.013
Reccurence	1(6.7%)	7(46.7%)		

In my study, high recurrence is observed in patients underwent Excision with primary closure technique than patients who underwent Rhomboid excision with Limberg flap. Difference is significant.

DISCUSSION:

The pilonidal sinus disease occurs mostly in the late teens and early twenties. In my study, the mean age at presentation is 28 years though there will be earlier age at presentation of 24 years in western literature

Occupational Incidence

Pilonidal Sinus Disease is also known as "Jeep Bottom," individuals who spend a lot of time working or sitting next to vibrating machines are more likely to develop this condition.

Clinical Presentation

In our study, intermittent discharge (50%) and pain (30%) in the gluteal region were the most frequent symptoms in individuals with pilonidal sinus illness. Discharge may frequently be persistent, and the patient may have pain that is dull aching in character.

Some individuals were also admitted with midline cleft swelling, which is frequently sporadic in origin. Sometimes, after rupturing, this resolves by itself, leaving behind a foul-smelling discharge that contains hairs. If definitive surgery is not performed, substantial recurrence rates will result.

Operating Time:

The average operating time for the Rhomboid excision with Limberg flap was 67.33 minutes, compared to 47.67 minutes for the Excision with Primary Closure procedure.

This demonstrates that the primary closure group (group-B) required less time during surgery than the flap group (group-A), and the difference was statistically significant (p0.0001).

Early postoperative complications were compared between the two groups in our study, and it is evident that 53% of group A patients and only 20% of group B patients experienced no issues. Compared to only 13% in group A, wound infection accounts for 53% of cases in group B. These early postoperative problems incidence differences between the two groups were all statistically significant (p-0.025).

Hospital stay:

In our study, the limberg flap group mean hospital stay was 4.47 days, compared to the excision and primary closure group mean hospital stay of 6.40 days. (p-0.00001) The difference was statistically significant.

Return To Work Or Physical Activity:

According to our research, the average day that subjects returned to their jobs was 14 days for group A and 18 days for group B (p 0.000003). The mean day of return to work in a research by Abdelraheem O et al.[67] was 18 days in the limberg flap group and 22 days in the primary closure group.

One Month Follow Up:

In our study after 1 month of follow up, it was found that 86% of patients had healthy scar in group-A compared to only 60% in group-B. More over 26% had wound gaping in group-B and only 6.7% in group-A.

While evaluating for hypertrophic scar it was found that 13.3% in group B and 6.7% in group-A (p-0.239).

Six Month Follow Up :

In our study after successful 6 months of follow up, it was found that 93 % in group-A had no recurrence. But there was high incidence (46%) of recurrence in group-B as compared to 6.7% in group-A (p-0.013). In another study by Abdelraheem O et al[14], there was a 3.3% of recurrence in limberg flap group compared to 20% in primary closure group (p-0.035). In the study of Akca et al., recurrence rate was higher in the primary repair than the Limberg flap group

CONCLUSION

The following findings were made in our investigation of 30 pilonidal sinus patients who had a range of presentations:

- Pilonidal disease is a condition of the midline natal cleft that primarily affects young male adults and those whose jobs require a lot of sitting.
- The various presenting styles range from asymptomatic to severe nasal discharge or edema.
- It occurs more frequently in patients who are hirsute and have deep natal clefts.
- It is a clinically supported diagnosis.
- The fundamental goal of managing pilonidal illness is conservative management together with conclusive surgical treatment.
- The most efficient method of treating the condition is rhomboid excision with Limberg flap surgery because, in contrast to excision and primary closure, it completely eliminates the midline natal cleft.

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